

15-501 Testing and adjusting firing point

Testing and adjusting values

Standard version

Engine	Ignition distributor Bosch No.	Adjusting value ¹⁾ of firing point without vacuum 3500/min	Test value Ignition adjustment with/without vacuum			Vacuum adjustment in direction of "retard" at idle "advance" at 3500/min		Installation value of ignition distributor at starting speed without vacuum
110.984 110.985 110.986 110.987 110.994	0 237 302 002	30° ²⁾	Idle with	1500/min	3000/min without			10° before TDC
	0 237 302 003		OT ± 3° ³⁾	16–20°	30°	8–12°	8–12°	
	0 237 302 005 0 237 304 003 0 237 302 017 0 237 304 012		OT ± 3° ³⁾	18–23°				
			OT ± 3° ³⁾	15–25°	30°	8–12°	8–12°	
	110.988 110.989 110.990		7–13°	20–24°	29–33°	–	10–14°	12° before TDC
	0 237 306 045							

¹⁾ If normally compressed engines are operated with fuel under 98 RON (min. 88 MON), adjust firing point in direction of "retard" and match to octane rating of fuel used. The reference value for this adjustment is: set firing point back by 1–2° crank angle per 1 RON. Max. setback should not exceed 6° crank angle.

Attention!

Taking firing point back is considered an "**emergency measure**". Reduced output and increased fuel consumption will result. In addition, the engine should not be fully loaded. As soon as fuel with specified octane number is available, set again to full advance.

²⁾ To set firing point, pull off both vacuum lines for ignition adjustment.

³⁾ Switch off air conditioner, automatic transmission in position "N" or "P".

National version

Ignition distributor Bosch No.	Adjusting value of firing point with vacuum at idle	Test values Ignition adjustment without vacuum	Vacuum adjustment in direction of "retard" at idle "advance" at 3000/min		Installation value of ignition distributor at starting speed without vacuum
		1500/min 3000/min			

(AUS) 1977

Identification: silver information plate on cross member in front of radiator.

0 237 302 002	TDC	14–19°	25–35°	8–12°	8–12°	10° before TDC
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(AUS) 1978/79/80

0 237 302 005 0 237 302 017	TDC	15–25°	26–35°	8–12°	8–12°	10° before TDC
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(AUS) 1981

0 237 304 018	2° after TDC	12–18°	25–31° 3500/min	9–11°	8–12°	10° before TDC
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Ignition distributor Bosch No.	Adjusting value of firing point with vacuum at idle	Test values Ignition adjustment without vacuum 1500/min 3000/min	Vacuum adjustment in direction of "retard" "advance" at idle	Installation value of ignition distributor at starting speed without vacuum
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(AUS) 1982

0 237 304 021	2° after TDC	8–12°	19–23° 3500/min	9–11°	8–12°	10° before TDC
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(J) 1977/78/79

Identification: Information plate on cross member in front of radiator in Japanese language.

0 237 304 001	TDC	16–20°	28–34°	8–12°	8–12°	10° before TDC
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(J) 1980

0 237 304 003 0 237 304 010	TDC	15–25°	27–34°	8–12°	8–12°	10° before TDC
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(J) 1981

0 237 304 018	10° before TDC ¹)	18–22°	28–34°	9–11°	8–12°	10° before TDC
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(J) 1982

0 237 304 021	10° before TDC ¹)	8–12°	19–23° 3500/min	9–11°	8–12°	TDC
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(S) 1977

Identification: Blue information plate in Swedish language on cross member in front of radiator.

0 237 302 002	TDC	14–19°	28–34°	8–12°	8–12°	10° before TDC
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(S) 1978/79/80

0 237 302 005	TDC	15–20°	26–35°	8–12°	8–12°	10° before TDC
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(S) 1981

0 237 304 018	2° after TDC	12–18°	25–31° 3500/min	9–11°	8–12°	10° before TDC
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(S) 1982

0 237 304 021	2° after TDC	8–12°	19–23° 3500/min	9–11°	8–12°	TDC
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Ignition distributor Bosch No.	Adjusting value of firing point with vacuum at idle	Test values Ignition adjustment without vacuum 1500/min 3000/min	Vacuum adjustment in direction of "retard" at idle	"advance" at 3000/min	Installation value of ignition distributor at starting speed without vacuum
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(USA) 1977

Identification: green/black information plate in English language on cross member in front of radiator

0 237 304 001	TDC	16–20°	28–34°	8–12°	8–12°	10° before TDC
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(USA) 1978/79

0 237 304 003	TDC	15–25°	27–34°	8–12°	8–12°	10° before TDC
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(USA) 1980

0 237 304 003	10° before TDC ¹⁾	15–25°	27–34°	8–12°	8–12°	10° before TDC
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(USA) 1981

0 237 304 018	10° before TDC ¹⁾	18–22°	28–34°	9–11°	8–12°	10° before TDC
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¹⁾ Adjusted with engine at operating temperature. Vacuum retard will be switched off above 50 °C engine temperature.

Conventional tool

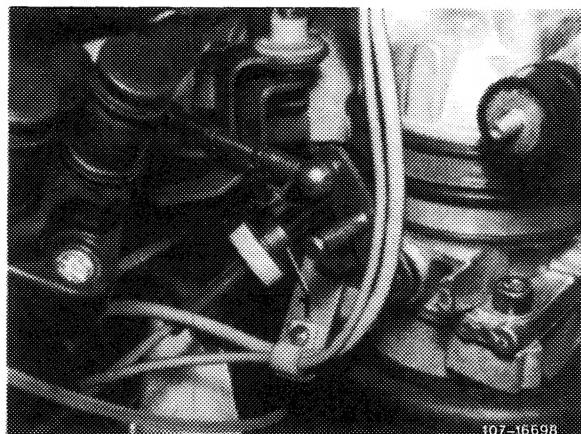
Digital tester

e. g. made by Bosch, MOT 001.03

Note

To improve emission values, standard engines are provided with a delay valve which is installed into vacuum line for vacuum advance.

When the throttle valve is quickly opened, the vacuum control unit will be activated with a vacuum under delay.



1 Delay valve

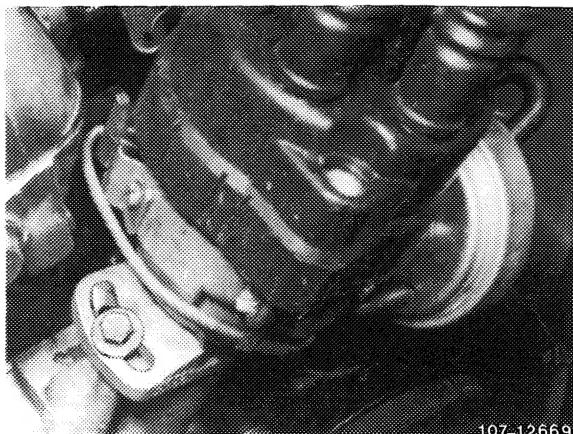
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Testing and adjusting

- 1 Test firing point with stroboscope or digital tester at specified speed and with or without vacuum.
- 2 Loosen ignition distributor fastening, if required, and set adjusting value of firing point by turning ignition distributor.

Screw down ignition distributor and check firing point once again.
- 3 Check centrifugal and vacuum adjustment of ignition distributor. For this purpose, run through specified test values with or without vacuum adjustment.

When testing vacuum advance, note that on engines with delay valve the vacuum will be established slightly slower.



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